WHAT IS CLAIMED IS:

1. A focal point dislocation detection method, comprising the step of:

detecting focal point dislocation of a converging optical system in accordance with, among light beams that have passed through said converging optical system, a light beam that corresponds to an extreme value of a curve and a region in a vicinity of the extreme value, where the curve represents a wavefront of such a state that said converging optical system is so adjusted as to have an image point at which the light beam has a smallest beam diameter.

2. A focal point dislocation detection method, comprising the step of:

detecting focal point dislocation of a converging optical system in accordance with a light beam of a 60% to 85% region of a light beam effective diameter, where the light beam effective diameter, which is centered with respect to an optical axis of the light beam passing through said converging optical system including an objective lens, is regulated by a numerical aperture of said objective lens.

3. The focal point dislocation detection method as

set forth in Claim 2, comprising the step of:

detecting the focal point dislocation of said converging optical system in accordance with a first focus error signal, which indicates the focal point dislocation of the converging optical system, where the first focus error signal is generated by (1) separating, out of the light beams passing through said converging optical system, the light beam of the 60% to 85% region of the light beam effective diameter that is regulated by the numerical aperture of said objective lens, and (2) converting the separated light beam electrically into the first focus error signal.

4. The focal point dislocation detection method as set forth in Claim 3, wherein the detection of the focal point dislocation is carried out in accordance with a light beam of a substantially 70% region of the light beam effective diameter.

5. The focal point dislocation detection method as set forth in Claim 3, wherein the separated light beam is obtained by passing a light beam, which has passed said converging optical system, through a light separating region, which is surrounded by a first circle or circular arc and a second circle or circular

arc, where the first circle has a diameter larger than a diameter equivalent with 85% of the light beam effective diameter that is regulated by the numerical aperture and is centered with respect to the optical axis of the light beam passing through said converging optical system, and where the second circle or circular arc has a diameter smaller than a diameter equivalent with 60% of the light beam effective diameter regulated by the numerical aperture of said objective lens.

6. The focal point dislocation detection method as set forth in Claim 5, comprising the step of:

detecting spherical aberration of said converting optical system in accordance with at least one of a second focus error signal and a third focus error signal, where the second focus error signal is obtained by detecting focal point dislocation of a light beam that passes a region inside the second circle or circular arc, and where the third focus error signal is obtained by detecting focal point dislocation of a light beam that passes a region outside the first circle or circular arc.

7. The focal point dislocation detection method as set forth in Claim 5, wherein a spherical aberration

error signal SAES, which indicates spherical aberration generated in said converging optical system, satisfies:

$$SAES = F2 - F1 \times K1 \text{ (K1 is a coefficient)}$$

or

$$SAES = F3 - F1 \times K2 \text{ (K2 is a coefficient)},$$

where F1 is the first focus error signal, which indicates the focal point dislocation of said converging optical system, F2 is a second focus error signal, and F3 is a third focus error signal.

8. The focal point dislocation detection method as set forth in Claim 2, wherein the detection of the focal point dislocation is carried out by a knife-edge method.

9. The focal point dislocation detection method as set forth in Claim 2, wherein the detection of the focal point dislocation is carried out by a beam-size method.

10. An optical pickup apparatus, comprising:

a light source;

a converging optical system for converging, onto a

recording medium, a light beam emitted from said light source; and

focal point dislocation detecting means for detecting focal point dislocation of said converging optical system in accordance with, among light beams that have passed through said converging optical system, a light beam that corresponds to an extreme value of a curve and a region in a vicinity of the extreme value, where the curve represents a wavefront of such a state that an image point, at which the light beam has a smallest beam diameter, is formed on an information recording layer of an optical recording medium.

11. An optical pickup apparatus, comprising:

a light source;

a converging optical system, including an objective lens for converging a light beam emitted from said light source onto an optical recording medium; and

focal point dislocation detecting means for detecting focal point dislocation of the converging optical system in accordance with a light beam of a 60% to 85% region of a light beam effective diameter, where the light beam effective diameter, which is centered with respect to an optical axis of the light beam

passing through said converging optical system, is regulated by a numerical aperture of said objective lens.

12. The optical pickup apparatus as set forth in Claim 11, wherein said focal point dislocation detecting means includes (a) light beam separating means for separating, out of light beams passing said converging optical system, the light beam of the 60% to 85% region of the light beam effective diameter regulated by the numerical aperture of said objective lens, and (b) first signal generation means for generating a first focus error signal in accordance with the light beam separated by said light beam separating means,

wherein the first focus error signal indicates focus point dislocation of said converging optical system.

13. The optical pickup apparatus as set forth in Claim 11, wherein said focal point dislocation detecting means detects the focal point dislocation in accordance with a light beam of a substantially 70% region of the light beam effective diameter.

14. The optical pickup apparatus as set forth in Claim 12, wherein said light beam separating means includes a first light separating region, which is surrounded by a first circle or circular arc and a second circle or circular arc, where the first circle has a diameter larger than a diameter equivalent with 85% of the light beam effective diameter regulated by the numerical aperture of said objective lens, and is centered with respect to the optical axis of the light beam passing through said converging optical system, and where the second circle or circular arc has a diameter smaller than a diameter equivalent with 60% of the light beam effective diameter regulated by the numerical aperture of said objective lens,

wherein said first signal generating means generates the first focus error signal in accordance with a light beam that passes through the first light separating region of said light beam separating means.

15. The optical pickup apparatus as set forth in Claim 14, comprising:

second signal generating means for generating a second focus error signal by detecting focal point dislocation of a light beam passing through a region

inside said second circle or circular arc of said light beam separating means;

third signal generating means for generating a third focus error signal by detecting focal point dislocation of a light beam passing through a region outside the first circle or circular arc; and

spherical aberration detecting means for detecting spherical aberration of said converging optical system in accordance with at least one of the second and third focus error signals.

16. The optical pickup apparatus as set forth in Claim 15, wherein said spherical aberration detecting means determines a spherical aberration error signal SAES, which indicates spherical aberration generated in said converging optical system, the spherical aberration error signal SAES satisfies:

$$SAES = F2 - F1 \times K1 \text{ (K1 is a coefficient)}$$

or

$$SAES = F3 - F1 \times K2 \text{ (K2 is a coefficient),}$$

where F1 is the first focus error signal, which indicates the focal point dislocation of said converging optical system, F2 is the second focus error

signal, and F3 is the third focus error signal.

17. The optical pickup apparatus as set forth in Claim 11, wherein, in case said optical recording medium has a plurality of said information recording layers, said focal point dislocation detecting means detects the focal point dislocation in said respective information recording layers.

18. The optical pickup apparatus as set forth in Claim 11, comprising:

focal point dislocation compensating means for compensating the focal point dislocation of said converging optical system in accordance with a result of the detection carried out by said focal point dislocation detecting means; and

spherical aberration compensating means for compensating spherical aberration, which has been generated in said converging optical system, in accordance with a result of the detection carried out be said spherical aberration detecting means,

wherein said spherical aberration compensating means compensates the spherical aberration of said converging optical system, whose focal point dislocation has been compensated by said focal point

dislocation compensating means.

19. The optical pickup apparatus as set forth in Claim 12, wherein said light separating means is a hologram.